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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/524,358	03/14/2000	Tateo Oishi	450100-02402	8951

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EXAMINER

NALVEN, ANDREW L

ART UNIT PAPER NUMBER

2134

DATE MAILED: 08/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/524,358

Applicant(s)

OISHI ET AL.

Examiner

Andrew L. Nalven

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 and 8-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. Claims 1-6 and 8-18 are pending.
2. Amendment submitted 10/3/2005 has been received and entered.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-6 and 8-18 have been considered but are moot in view of the new grounds of rejection.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-6 and 8-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. With regards to claims 1-6 and 8-18, the cited claims are indefinite because they require expanding encrypted compressed data blocks without decrypting them first.

The compressed data blocks are encrypted (see Claim 1 line 2). Thus, decryption must take place to restore the compressed data blocks to an unencrypted form where they may be properly decompressed (expanded).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 6, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Bruce Schneier's Applied Cryptography in view of Hino et al EP 0,851,627 and in view of Miller et al US Patent No. 5,237,460. Schneier teaches the implementation of the DES algorithm.

8. With regards to claims 1 and 13, Schneier discloses processing means for defining a processing block having a data block length of a whole multiple of the predetermined length of an encryption block and for expanding compressed data in units of the predetermined processing block length (Schneier, Page 273, Expansion Permutation, Page 270, Section 12.2 "Outline of the Algorithm", Processing Block viewed as 32 bit block, encryption block viewed as a byte), and a control means for writing encrypted data so that data positioned in the same encryption block is also positioned in the same processing block (Schneier, Page 271, Figure 12.1). Schneier fails to teach encrypting compressed data, a storage means for storing encrypted data and compression into minimum readable data units such that there are no breaks between the stored blocks. Hino teaches encrypting compressed data and storage

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means for storing encrypted data (Hino, column 17 lines 21-30). Miller teaches compression into minimum readable data units such that there are no breaks between the stored blocks (Miller, column 4 lines 5-25, column 3 lines 60-67, data block is encrypted into a minimum block of 256 byte). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include Hino's storage and encrypting means and Miller's compression mechanism because they offer the advantage of increasing processor efficiency and reducing power consumption while providing effective security against cryptanalysis (Hino, column 2 lines 1-17, column 4 lines 29-30) and increasing the storage density, reducing the cost per byte for storage, and reducing the amount of unused storage space (Miller, column 1 lines 53-67).

9. With regards to claim 6, Schneier as modified teaches the control means outputting data read out into the processing means (Hino, Figure 2).

10. Claims 2-3, 14-15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneier Applied Cryptography, Hino et al EP 0,851,627, and Miller et al US Patent No. 5,237,460, as applied to claims 1 and 13 above, and in further view of Bellovin et al US Patent No. 5,241,599.

11. With regards to claims 2 and 14, Schneier as modified above fails to teach the inserting of data into the processing block in order to adjust the data length so that it becomes a whole number multiple of the predetermined length. Bellovin teaches the insertion of data in order to meet the predetermined length of a block (Bellovin, column 10, lines 24-30). At the time the invention was made, it would have been obvious to a

person of ordinary skill in the art to utilize Bellovin's method of inserting data because it offers the advantage of helps prevent partition attacks against encryption keys (Bellovin, column 9 line 54 – column 10 line 47).

12. With regards to claims 3, 15, and 18, Schneier as modified above fails to teach the encryption process using the block to be encrypted and a ciphertext from the previous block. Bellovin teaches an encryption process using the block to be encrypted and a ciphertext from the previous block in the form of cipher-block chaining (Bellovin, column 13, lines 10-13 and 30-35).

13. Claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneier Applied Cryptography, Hino et al EP 0,851,627, Miller et al US Patent No. 5,237,460, and Bellovin et al US Patent No. 5,241,599 as applied to claims 3 and 15 above, and further in view of Cassagnol US Patent No. 6,385,727.

14. With regards to claims 4 and 16, Schneier as modified above teaches a cluster of encrypted data stored in a storage means (Hino, column 17 lines 20-30), but fails to teach the storing of values initially used when encrypting stored in one of the processing blocks. Cassagnol teaches the storing of values initially used (cited as whitening keys) when encrypting stored in one of the processing blocks (Cassagnol, column 10, lines 37-52). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize Cassagnol's method of storing initial values because it offers the advantage of allowing keys to be stored with and thus imported with their respective encrypted blocks (Cassagnol, column 10, lines 49-52) and helps preserve

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memory resources by reducing the need for on chip memory storage of keys (Cassagnol, column 10, lines 40-47).

15. Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneier Applied Cryptography, Hino et al EP 0,851,627, Miller et al US Patent No. 5,237,460, Bellovin et al US Patent No. 5,241,599, and Cassagnol US Patent No. 6,385,727 as applied to claim 4 above, and further in view of Yuenyongsgool US Patent No. 6,202,152.

16. With regards to claims 5 and 17, Schneier as modified above teaches the storing of processing blocks in the order of encryption (Hino, column 17 lines 21-38), but fails to teach the storage of blocks at consecutive addresses. Yuenyongsgool teaches the storage of data by consecutive addresses (Yuenyongsgool, column 2, lines 38-45). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize Yuenyongsgool's method of consecutive address storage because it offers the advantage of helping accelerate information transfers from encrypted memory (Yuenyongsgool, column 2, lines 4-23).

17. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schneier Applied Cryptography in view of Hino et al EP 0,851,627, Miller et al US Patent No. 5,237,460, and Bahout et al US Patent No. 5,594,793.

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18. With regards to claim 8, Schneier as modified above in the rejection of claim 1 fails to teach a system for mutual identification between the storage and data processing apparatuses. However, Bahout teaches a system for mutual identification between the storage and data processing apparatuses using stored keys and algorithms within the data processor (Bahout, column 7, lines 7-25). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize Bahout's mutual identification method because it offers the advantage of giving the system a degree of inviolability by ensuring that data processor only functions with a specific storage device (Bahout, column 1, lines 9-16 and 55-60).

19. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneier Applied Cryptography, Hino et al EP 0,851,627, Miller et al US Patent No. 5,237,460, and Bahout et al US Patent No. 5,594,793, as applied to claim 8 above, and in further view of Bellovin et al US Patent No. 5,241,599.

20. With regards to claim 9, Schneier as modified above fails to teach the inserting of data into the processing block in order to adjust the data length so that it becomes a whole number multiple of the predetermined length. Bellovin teaches the insertion of data in order to meet the predetermined length of a block (Bellovin, column 10, lines 24-30). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize Bellovin's method of inserting data because it offers the advantage of helps prevent partition attacks against encryption keys (Bellovin, column 9 line 54 – column 10 line 47).



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21. With regards to claim 10, Schneier as modified above fails to teach the encryption process using the block to be encrypted and a ciphertext from the previous block. Bellovin teaches an encryption process using the block to be encrypted and a ciphertext from the previous block in the form of cipher-block chaining (Bellovin, column 13, lines 10-13 and 30-35).

22. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schneier Applied Cryptography, Hino et al EP 0,851,627, Miller et al US Patent No. 5,237,460, Bahout et al US Patent No. 5,594,793, and Bellovin et al US Patent No. 5,241,599 as applied to claim 11 above, and further in view of Cassagnol US Patent No. 6,385,727.

23. With regards to claim 11, Schneier as modified teaches a cluster of encrypted data stored in a storage means (Hino, column 17 lines 20-30), but fail to teach the storing of values initially used when encrypting stored in one of the processing blocks. Cassagnol teaches the storing of values initially used (cited as whitening keys) when encrypting stored in one of the processing blocks (Cassagnol, column 10, lines 37-52). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize Cassagnol's method of storing initial values because it offers the advantage of allowing keys to be stored with and thus imported with their respective encrypted blocks (Cassagnol, column 10, lines 49-52) and helps preserve memory resources by reducing the need for on chip memory storage of keys (Cassagnol, column 10, lines 40-47).

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24. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schneier Applied Cryptography, Hino et al EP 0,851,627, Miller et al US Patent No. 5,237,460, Bahout et al US Patent No. 5,594,793, Bellovin et al US Patent No. 5,241,599, and Cassagnol US Patent No. 6,385,727 as applied to claim 11 above, and further in view of Yuenyongsgool US Patent No. 6,202,152.

25. With regards to claim 12, Schneier as modified above fails to teach the storage of blocks at consecutive addresses. Yuenyongsgool teaches the storage of data by consecutive addresses (Yuenyongsgool, column 2, lines 38-45). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize Yuenyongsgool's method of consecutive address storage because it offers the advantage of helping accelerate information transfers from encrypted memory (Yuenyongsgool, column 2, lines 4-23).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L. Nalven whose telephone number is 571 272 3839. The examiner can normally be reached on Monday - Thursday 8-6, Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques can be reached on 571 272 6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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